REMARKS

Claims 38-43, 45-51, 53-61, 63-66, 68, 69, 71-77, 79-85, and 87-99 were pending in this application. Claims 39, 45, 65, 69, 71, and 89-99 are canceled without prejudice. Applicant expressly reserves the right to pursue protection of any or all of the subject matter of the canceled claims in a subsequent application. Claims 38, 41-43, 50, 54, 55, 57-61, 63, 68, 80, 81, 83-85, 87 and 88 have been amended. Support for the claim amendments is discussed below where applicable. No new matter is introduced by these claim amendments.

After entry of this amendment **claims 38, 40-43, 46-51, 53-61, 63, 64, 66, 68, 72-77, 79-85, 87, and 88 are pending in this application**. Consideration of the pending claims is requested.

Claim Rejections under 35 U.S.C. §112, 2nd paragraph:

Claims 38-43, 45-51, 53-61, 63-66, 68, 69, 71-77, 79-85, and 87-99 have been rejected under 35 U.S.C. §112, 2nd paragraph as set forth more specifically below:

Claims 38 and 45 are rejected because, allegedly, "the metes and bounds of 'a specific DNA' are unclear." Applicant traverses this rejection. Nevertheless, to facilitate prosecution of this application, claim 38 has been amended so as not to recite the phrase "a specific DNA" and, for reasons unrelated to this rejection, claim 45 has been canceled. Accordingly, this rejection is moot and Applicant respectfully requests that it be withdrawn.

Claims 38, 45, 63, and 71 are rejected because, allegedly, "the metes and bounds of 'associate with' and 'interaction' are unclear." Applicant traverses this rejection. Claim 63 (as pending at the time of the Office action and as amended herein) does not recite either of the allegedly offending phrases. Claims 45 and 71 have been canceled. Thus, this rejection is inapplicable or moot with respect to claims 45, 63, and 71.

Claim 38 has been amended and no longer recites the phrase "associate with." Amended claim 38 now recites, in relevant part, ". . . a direct interaction between one or more subunits of a SWI/SNF chromatin remodeling complex and a nucleic acid regulatory protein DNA binding

domain peptide . . . ." This amendment is supported by the specification, for instance, at page 9, lines 28-29; page 10, line 4; page 18, line 20; and/or page 25, line 13. The Office indicates (at page 3, lines 2-4 of the Office action) that the basis of the claim 38 rejection is that the "degree of . . . interaction [whether direct or indirect] is unclear." Amended claim 38 recites a direct interaction; thus, the allegedly lacking distinction has been clarified.

In view of the above arguments and claim 38 amendment, Applicant respectfully requests that this rejection be withdrawn.

Claims 38 and 45 are rejected because, allegedly, "a method step for the identification of a compound that necessarily modulates chromatin remodeling is missing." Applicant traverses this rejection. As an initial matter, claim 45 has been canceled for reasons unrelated to this rejection. Claim 38 has been amended to clarify that the claimed method is directed to identification of "a compound that modulates [the] direct interaction between one or more subunits of a SWI/SNF chromatin remodeling complex and a nucleic acid regulatory protein DNA binding domain peptide." Hence, the allegedly missing step is not required in the method of amended claim 38, and the rejection is moot. Accordingly, Applicant respectfully requests that this rejection be withdrawn.

Claim 89 is rejected because there is "insufficient antecedent basis" for the preamble "The new method." Claim 89 has been canceled for reasons unrelated to this rejection. Thus, the rejection is moot and Applicant respectfully requests that it be withdrawn.

With respect to claims 39-43, 46-51, 53-61, 64-66, 68, 69, 72-77, 79-85, and 87, 88, and 90-99: Other than the bases for rejection of claims 38, 45, 63, 71 and 89, the Office has not provided specific rationales for the §112, ¶2 rejections of claims 39-43, 46-51, 53-61, 64-66, 68, 69, 72-77, 79-85, and 87, 88, or 90-99. Thus, Applicant respectfully requests that this rejection of claims 39-43, 46-51, 53-61, 64-66, 68, 69, 72-77, 79-85, and 87, 88, and 90-99 be withdrawn as moot (to the extent such claims have been canceled by this Amendment), as overcome by one or more of the arguments and/or amendments discussed above for claims 38 and 63, or as unsupported by specific reasoning from the Office.

Claim Rejections under 35 U.S.C. §112, 1st paragraph:

Claims 45, 54-61, 71, and 80-99 have been rejected under 35 U.S.C. §112, 1st paragraph (written description) because, allegedly, "applicants claim a genus of ISWI subunits in association with domains of nuclear regulatory proteins . . . [and] do not disclose any subunits of ISWI . . .[; thus,] it is concluded that the invention must be empirically determined." Applicant traverses this rejection. However, to facilitate prosecution of this application, claims 45, 54-61, 71, and 80-99 have either been canceled or amended to remove reference to ISWI subunits. Accordingly, this rejection is now moot and Applicant requests that it be withdrawn.

Claim Rejections under 35 U.S.C. §102:

Claims 38-40, 43, 48, 53, and 57-61 have been rejected under 35 U.S.C. §102(e) as being allegedly anticipated by Wong *et al.*, U.S. Pat. No. 6,465,629 ("Wong"). Applicant traverses this rejection.

Claim 38 and its dependent claims 39-40, 43, 53, and 57-61, as amended herein, are directed to a "method to identify a compound that modulates a *direct interaction* between one or more subunits of a SWI/SNF chromatin remodeling complex and a nucleic acid regulatory protein *DNA binding domain peptide*" (emphasis added). The claim 38 amendment is supported, at least, by Example 2 of the specification and, in particular, by page 26, line 29 through page 27, line 19 of Example 2. Additional support for a direct interaction between the components recited in claim 38 (and its dependent claims) has been previously discussed.

To be anticipatory, a single reference must teach each and every element of a claim (see MPEP §2131). The Office cites Wong for teaching "a method of screening drugs that modulate the binding of Rb with BRG1, a chromatin remodeling subunit of SWI/SNF." The only *direct interaction* in this alleged teaching is between retinoblastoma tumor suppressor (Rb) and BRG1. Neither Rb nor BRG1 teaches a nucleic acid regulatory protein *DNA binding domain peptide*. Thus, at least, this element of the claimed method is not taught (or suggested) by Wong; therefore, Wong cannot and does not anticipate amended claims 38-40, 43, 53, or 57-61.

Moreover, the Office implicitly recognizes that Wong does not teach (or suggest) a method involving a *direct interaction* between one or more subunits of a SWI/SNF chromatin remodeling complex and a DNA binding domain peptide. Instead, Wong is alleged to teach "an association of DNA binding domains" via an "association of E2F with BRG1-Rb complex." E2F is further described by the Office as containing "a winged helix DNA binding motif that binds to promoter regions." Even if Wong teaches these observations (which is not admitted, see below), an *indirect interaction* of E2F (having a DNA binding domain) with BRG1 by virtue of an association between E2F and Rb and an association between Rb and BRG1 does not teach a *direct interaction* between one or more subunits of a SWI/SNF chromatin remodeling complex (such as, BRG1) and a nucleic acid regulatory protein DNA binding domain peptide." For these further reasons, Wong does not anticipate amended claims 38-40, 43, 53, or 57-61.

Applicant respectfully notes that Wong teaches neither an association of E2F with the BRG1-Rb complex nor a DNA-binding domain of the E2F protein. Wong merely states that "BRG1 interacts with RB *to regulate* a set of transcription factors known as E2Fs" (column 28, lines 58-59; emphasis added). Such regulation may have many intervening steps and need not involve an association between a BRG1-Rb complex and E2F. Consequently, it appears that evidence from more than a single reference (*i.e.*, Wong) is being used to support this anticipation rejection.

In view of the claim amendments and arguments discussed above, Applicant respectfully requests that this rejection be withdrawn.

Claim Rejections under 35 U.S.C. §103:

Claims 63, 64, 66, 69, 74, 84, 85, 87, and 88 have been rejected under 35 U.S.C. §103(a) as allegedly being obvious in light of Wong in view of Peterson and Logie, U.S. Pat. No. 5,972,608 ("Peterson"), and further in view of Kadonaga (*Cell*, 92:307-313, 1998). Applicant traverses this rejection.

Amended claim 63 and its dependent claims 64, 66, 69 (now canceled), 74, 84, 85, 87, and 88 are directed to a "method to identify a compound that modulates chromatin remodeling of

a specific DNA sequence within chromatin" involving ". . . contacting [] chromatin assembled DNA with one or more subunits of an SWI/SNF chromatin remodeling complex, and [a] DNA binding domain peptide of the nucleic acid regulatory protein; and . . . determining the level of chromatin remodeling in the presence and absence of the test compound . . . " (emphasis added). Claim 63 amendments are supported by the specification, for example, at page 19, lines22-24 in combination with page 20, lines 1-4; and page 29, lines 19-20.

To establish a *prima facie* case of obviousness the Office must, among other things, cite one or more prior art references that teach or suggest all the claim limitations (see MPEP §2142). Wong does not teach anything at all about a method for identifying *compounds that modulate chromatin remodeling*. Wong does not describe nor appreciate the role of BRG1 in chromatin remodeling, much less contemplate that an interaction between BRG1 and a DNA binding domain might be important in chromatin remodeling. The term "chromatin" is not even mentioned in Wong.

Among other things, Wong does not teach (i) contacting chromatin assembled DNA with one or more subunits of an SWI/SNF chromatin remodeling complex, and a DNA binding domain peptide of the nucleic acid regulatory protein or, as expressly recognized by the Office, (ii) determining [a] level of chromatin remodeling. Even if Peterson and Kadonaga teach particular techniques for carrying out the "determining" step (as suggested by the Office and not conceded by Applicant), neither reference makes up for the other deficiencies in Wong. Thus, this combination of references fails to teach all the claim elements. Moreover, there is no proffered motivation to combine the Wong, Peterson, and Kadonaga references that is "found either explicitly or implicitly in the references themselves" (see MPEP §2143.01). For at least these reasons, a *prima facie* case of obviousness has not been established. Accordingly, Applicant respectfully requests that the rejection be withdrawn.

Claims 41, 47, 53-57, 65, 73, and 80-83 have been rejected under 35 U.S.C. §103(a) as allegedly being obvious in light of Wong in view of Strober *et al.*, (*Mol. Cell. Biol.*, 16(4):1576-1583, 1996) ("Strober"). Applicant traverses this rejection.

According to the Office, this rejection relies on the finding that "[i]t would have been obvious to one of ordinary skill in the art at the time the invention was made to perform the assay for drugs that alter Rb binding to BRG1 as taught by Wong et al using BRM as taught by Strober et al."

Claims 41, 47, and 53-57, as amended herein, are directed to a "method to identify a compound that modulates a direct interaction between one or more subunits of a SWI/SNF chromatin remodeling complex and a nucleic acid regulatory protein DNA binding domain peptide." As discussed in detail above, Wong does not teach a nucleic acid regulatory protein DNA binding domain peptide as used in the claimed method." Strober does not make up for this deficiency in Wong; thus, these references (alone or in combination) do not teach all of the elements of the method of claims 41, 47, or 53-57.

Claim 65 has been canceled; thus, this rejection is moot with respect to that claim.

Amended claims 73 and 80-83 are directed to a method to identify a compound that modulates chromatin remodeling of a specific DNA sequence within chromatin. As discussed in detail above, Wong does not teach several features of the claimed method including (i) contacting chromatin assembled DNA with one or more subunits of an SWI/SNF chromatin remodeling complex, and a DNA binding domain peptide of the nucleic acid regulatory protein or, as expressly recognized by the Office, (ii) determining [a] level of chromatin remodeling. Strober does not make up for any of these deficiencies in Wong; thus, these references (alone or in combination) do not teach all of the elements of the method of claims 73 or 80-83.

In view of the foregoing claim amendments and arguments, Applicant respectfully requests that this rejection be withdrawn.

Additional Claim Amendments

Amended claim 43 is supported by, at least, page 27, lines 17-19 and 24-25 of the specification. Amended claims 59 and 87 are supported by the specification, for instance, at page 6, lines 10-13; at page 19, lines 17-18 (and following section); and at page 27, lines 24-26.

The addition of "zinc-finger domain" to claim 68 is supported throughout the specification, for example, at page 5, line 13.

Claims 41, 42, 50, 54, 55, 57, 58, 60, 61, 68, 80, 81, 83-85, and 88 are amended to correct claim dependencies, obvious typographical errors, and/or to ensure the proper antecedent basis for terms recited in such claims.

CONCLUSION

It is respectfully submitted that the present claims are in a condition for allowance. If any issues remain, the Examiner is requested to contact the undersigned attorney prior to issuance of the next Office action in order to arrange a telephone interview. It is believed that a brief discussion of the merits of the present application may expedite prosecution and allowance of the claims.

Respectfully submitted,

KLARQUIST SPARKMAN, LLP

By Debra A. Gordon

Debra A. Gordon, Ph.D.
Registration No. 54,128

One World Trade Center, Suite 1600
121 S.W. Salmon Street
Portland, Oregon 97204
Telephone: (503) 226-7391
Facsimile: (503) 228-9446